

IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claim 1. (*Currently Amended*) An exhaust sound and emission control system, comprising:

a housing having a housing wall, an exhaust inlet end, and an exhaust outlet end opposite said exhaust inlet end;

a plurality of spaced apart, generally V-shaped guides disposed within said housing, adjacent said exhaust inlet end thereof; and

a plurality of generally parallel, non-concentric tubes disposed longitudinally within said housing, beside one another;

wherein said tubes are of different diameters and lengths from one another .

Claim 2. (*Original*) The exhaust sound and emission control system according to claim 1, further including:

an inlet end plate disposed within said exhaust inlet end of said housing;

an outlet end plate disposed within said exhaust outlet end of said housing;

a baffle plate disposed longitudinally within said housing, extending from said inlet end plate and laterally across said housing wall, defining a first inlet volume and a second inlet volume;

said V-shaped guides extending across said first inlet volume from said baffle plate to said housing wall, and normal thereto;

a first tube set extending from said v-shaped guides to said outlet end plate; and

a second tube set extending from said second inlet volume to said outlet end plate.

Claim 3. (*Original*) The exhaust sound and emission control system according to claim 2, wherein at least said inlet end plate further includes a plurality of perforations therethrough.

Claim 4. (*Original*) The exhaust sound and emission control system according to claim 2, wherein said first tube set comprises at least a first tube surrounding a second tube.

Claim 5. (*Original*) The exhaust sound and emission control system according to claim 2, further including at least one gas flow crossover line connecting at least one of said tubes of said first tube set with at least one of said tubes of said second tube set.

Claims 6 and 7 (*Canceled*)

Claim 8. (*Original*) The exhaust sound and emission control system according to claim 1, wherein said tubes further include a plurality of perforations therethrough.

Claim 9. (*Original*) The exhaust sound and emission control system according to claim 1, further including:

an exhaust outlet collector tube having an interior end with an interior end opening, a medial portion, and an exterior end opposite said interior end, with said medial portion disposed through said exhaust outlet end of said housing; and

said interior end of said exhaust outlet collector tube being curved, with said interior end opening being beveled and positioned adjacent and generally parallel to said housing wall.

Claim 10. (*Original*) The exhaust sound and emission control system according to claim 1, further including at least one catalytic converter element disposed within said inlet end of said housing.

Claim 11. (*Original*) The exhaust sound and emission control system according to claim 1, further including a plurality of catalytic converter elements disposed within said inlet end of said housing.

Claim 12. (*Original*) The exhaust sound and emission control system according to claim 1, wherein said housing further comprises:

an outer wall; and

an inner wall spaced from said outer wall, and defining an acoustic insulation volume therebetween.

Claim 13. (*Original*) The exhaust sound and emission control system according to claim 12, further including acoustic insulation material disposed within said acoustic insulation volume between said outer wall and said inner wall.

Claim 14. (*Original*) The exhaust sound and emission control system according to claim 1, further including a removable exhaust inlet end attachment fitting, removably securing said exhaust inlet end to said housing.

Claim 15. (*Original*) The exhaust sound and emission control system according to claim 1, further including removable exhaust inlet end and exhaust outlet end attachment fittings, respectively removably securing said exhaust inlet end and said exhaust outlet end to said housing.

Claim 16. (*Currently Amended*) An exhaust sound and emission control system, comprising:

a canister for installing in the exhaust system of an internal combustion engine, with said canister including an inlet end, a forward portion adjacent said inlet end, a rearward portion adjacent said forward portion, an outlet end adjacent said rearward portion, a forward inner diameter, and a rearward inner diameter;

at least one catalytic converter element installed within said forward portion of said canister, with said catalytic converter element having an outer diameter and including a substrate

having a plurality of longitudinal passages therethrough, with each of said passages being defined by a plurality of substrate walls;

a resonator element installed within said rearward portion of said canister, with said resonator element having a hollow core, a forward end, a rearward end, an outer diameter, a length defined between said forward end and said rearward end, and a plurality of sound attenuating perforations formed radially therethrough;

said sound attenuating perforations being distributed along the length of said resonator element between said forward end and said rearward end;

said forward end defining a forward element inner diameter, and said rearward end defining a rearward element inner diameter;

wherein said forward element inner diameter and said rearward element inner diameter being substantially equal;

said outer diameter of said resonator element being smaller than said rearward inner diameter of said canister, and defining a sound attenuating plenum therebetween;

said inlet end of said canister, said plurality of passages of said catalytic converter element, said hollow core of said resonator element, and said outlet end of said canister all being axially aligned with one another for providing straight through, low restriction, free flow of engine exhaust therethrough; and

at least one removable end attachment fitting, removably securing at least said inlet end to said canister;

whereby the exhaust gases flow unimpeded through said catalytic converter and said resonator element within said canister.

Claim 17. (*Original*) The exhaust sound and emission control system according to claim 16, wherein said canister further comprises:

an outer wall;

an inner wall spaced from said outer wall, and defining an acoustic insulation volume therebetween; and

acoustic insulation material disposed within said acoustic insulation volume between said outer wall and said inner wall.

Claim 18. (*Original*) An exhaust sound and emission control system, comprising:

an elongate external housing, having an inlet end and an outlet end opposite said inlet end;

an inlet end plate and an outlet end plate, respectively secured to and sealing said inlet end and said outlet end of said housing and defining an interior volume therein;

an inlet pipe and an outlet pipe, respectively extending from said inlet end plate and from said outlet end plate, and communicating with said interior volume;

an inlet chamber, an intermediate chamber, and an outlet chamber disposed within said housing, respectively communicating with one another sequentially from said inlet pipe to said outlet pipe and defining a sinusoidal primary exhaust gas passage therethrough;

a first separator panel separating said inlet chamber from said intermediate chamber;

a second separator panel separating said intermediate chamber from said outlet chamber, said first separator panel and said second separator panel each including a lateral exhaust gas pressure balance passage therethrough, with each said pressure balance passage defining an alternative gas passage path through said interior volume; and

at least one catalytic converter element disposed within said inlet end of said housing.

Claim 19. (*Original*) The exhaust sound and emission control system according to claim 18, further including a plurality of catalytic converter elements disposed within said inlet end of said housing.

Claim 20. (*Original*) The exhaust sound and emission control system according to claim 18, further including at least one removable end attachment fitting, removably securing at least said inlet end to said housing.

Claim 21. (*New*) An exhaust sound and emission control system, comprising:

a housing having a housing wall, an exhaust inlet end, and an exhaust outlet end opposite said exhaust inlet end;

a plurality of spaced apart, generally V-shaped guides disposed within said housing, adjacent said exhaust inlet end thereof;

a plurality of generally parallel, non-concentric tubes disposed longitudinally within said housing, beside one another; and

at least one gas flow crossover line connecting at least one of said tubes with another of said tubes.